Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Petition to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks	)	RM-11361

COMMENTS OF CONSUMERS UNION, CONSUMER FEDERATION OF AMERICA AND FREE PRESS IN SUPPORT OF THE SKYPE PETITION

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SUMMARY

Consumers Union, Consumer Federation of America and Free Press are filing these joint comments in support of Skype's petition asking the Commission to declare that the *Carterfone* principle applies to wireless networks and to initiate a rulemaking proceeding to examine carrier practices that bear on the openness of wireless networks.

Skype has correctly identified some of the anti-consumer practices that are common in the wireless industry. Many consumers are troubled by the fact that they cannot take their phones with them when changing wireless providers, and that they are required to pay a substantial "early termination fee") if they cancel service before the end of a multi-year contract. Consumers find that handset features and capabilities such as Bluetooth and Wi-Fi are disabled or crippled by the carriers, thereby limiting the usefulness of the devices and wireless services for applications such as photo-sharing, file transfer or making phone calls via VoIP. Consumers may expend considerable sums to purchase devices and service plans that are promoted as providing "unlimited" access to 3G broadband services, only to later discover that "unlimited" in carrier-speak does not really mean unlimited. Certain applications, such as P2P file sharing, VoIP and the uploading or downloading of movies, games or videos may be completely off-limits, and carriers often impose undisclosed or poorly disclosed limits on the bandwidth a customer may use during a given month.

The restrictive practices of the wireless carriers with regard to applications and devices create problems that extend beyond the platform and impact the broadband competition problem more generally. As wireless networks begin offering Internet services, we must question whether the open architecture of the Internet or the "walled garden" of proprietary cellular networks will be the dominant model. The prospects thus far are not encouraging. The current 3G offerings

are not truly substitutable for wired broadband access. To the extent that they provide access to Internet applications and services, the current "wireless broadband" services are overpriced, targeted to the business segment and hedged about with bandwidth, usage and application restrictions. Intermodal competition has suffered to date because vertically integrated carriers have not tried to offer a wireless broadband product that would compete with their wired offerings.

In numerous speeches, legislators, regulators and industry participants alike have touted the power of the 700 MHz auction to deliver a wireless "third pipe." To be sure, the 700 MHz auction could be the last, best chance to bring a third pipe to the market. Yet the favorites to win this auction (the major cellular carriers) do not appear likely to deliver the third pipe in 4G any more than they did in 3G services. Thus, there is the very real and very troubling prospect that the entire wireless platform will not take on the open architecture of the Internet, but rather the closed architecture of the cellular systems. This would be a negative development for consumers, entrepreneurs, and ultimately the future of innovation in speech and commerce on the Internet in the US.

The Commission should ensure that next-generation wireless networks are neutral towards the devices and applications running on them. Manufacturers and software developers should be permitted to sell, and consumers to connect to the network, any innovative piece of software or hardware, provided only that the devices and applications do not harm the network.

We believe the Skype petition for rulemaking should be granted, but that the scope of the proceeding should be expanded to consider net neutrality beyond the applications layer into the physical layer of access to bandwidth.

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To: The Commission:

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Consumers Union, Consumer Federation of America and Free Press, through undersigned counsel, respectfully submit these Comments in support of the "Petition to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks" filed by Skype Communications, S.A.R.L. ("Skype").[1]

I. Statement of Interest

Consumers Union is a nonprofit membership organization chartered in 1936 under the laws of the state of New York to provide consumers with information, education and counsel about good, services, health and personal finance, and to initiate and cooperate with individual and group efforts to maintain and enhance the quality of life for consumers. Consumers Union's

[1] *See* In the Matter of Skype Communications S.A.R.L. Petition to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks, RM-____, filed February 20, 2007 ("Skype Petition"). The pleading cycle in this proceeding, originally set forth in a February 28, 2007 Public Notice (Report No. 2807) issued by the Consumer and Governmental Affairs Bureau was modified via an order (DA 07-1318) adopted March 14, 2007 by the Chief, Wireless Telecommunications Bureau. That order extended the date for comments to April 30, 2007 and the deadline for reply comments to May 15, 2007. Thus, these joint comments are timely filed.

income is solely derived from the sale of *Consumer Report*s, its other publications and from non-commercial contributions, grants and fees. In addition to reports on Consumers Union's own product testing, *Consumer Reports* with more than 5 million paid circulation, regularly carries articles on health, product safety, marketplace economics and legislative, judicial and regulatory actions which affect consumer welfare. Consumers Union's publications carry no advertising and receive no commercial support.

The Consumer Federation of America is the nation's largest consumer advocacy group, composed of over 280 state and local affiliates representing consumer, senior, citizen, low-income, labor, farm, public power and cooperative organizations, with more than 50 million individual members.

Free Press is a national, nonpartisan organization with over 350,000 members working to increase informed public participation in media and communications policy debates.

II. Discussion

A. Many, But Not All, Consumer Concerns Are Reflected in the Skype Petition.

Many consumers are obviously troubled by the fact that they cannot take their phones with them when changing wireless providers. As of Friday April 27, 2007, there were nearly 4,500 brief informal comments submitted in RM-11361, virtually all in support of the application of *Carterfone* to the wireless market. There are some instances where device portability is limited due to legitimate technical factors, such as network incompatibility (GSM vs. CDMA, for example). However, carriers have not hesitated to block or deter consumers from taking phones with them when they change carriers through a variety of tactics that have little or nothing to do with network security or device compatibility. Many of these tactics are described in detail in Professor Tim Wu's paper, "*Wireless Net Neutrality:* CELLULAR *CARTERFONE* AND CON-

SUMER CHOICE IN MOBILE BROADBAND" published by the New America Foundation in February 2007.[2] For example, one of the two major CDMA carriers, Verizon, keeps a "white-list" of the electronic serial numbers (ESNs) of the phones that it sells, and only those phones are permitted on its network. Sprint, the other major CDMA carrier, will allow customers to use phones that are purchased elsewhere, so long as the ESN is uniquely associated with a particular customer phone number and not "cloned" or duplicated.[3] The other two major carriers (AT&T and T-Mobile) employ GSM technology. GSM phones contain a small memory card ("subscriber identity module" or "SIM") that contains subscriber profile information. The original function of the SIM card was to allow a wireless subscriber to take service along when moving from one GSM system to another, even where carriers operated in different frequency bands. Thus, most GSM phones elsewhere in the world are unlocked, but both AT&T and T-Mobile ship their phones in "locked" mode, so that the phone/SIM card combination will only operate on their network, and do not routinely or willingly provide consumers with information on how to enter the codes that will "unlock" the phone.[4]

Consumers' inability to readily access information about their wireless devices and the applications and services also impedes their ability to switch devices or service providers in more subtle ways. Consumers may not know how to transfer information, including address books, speed dial sequences, downloaded music and ringtones, photos, games or other applications, or whether that transfer is even possible, and be deterred from moving from one carrier to another.[5]

Similarly, some consumers may be deterred from switching if their current wireless carrier has made an exclusive arrangement with a content provider (such as a television network), so

[2] The paper is available at: http://www.newamerica.net/files/WorkingPaper17_WirelessNetNeutrality_Wu.pdf.
[3] *Id.* at 8.
[4] *Id.* at 8-9.
[5] *Id.* at 10, describing how a monthly subscription to a photo-sharing site may be the only way to transfer photos from a mobile phone to a computer or other device.

that a favorite program would no longer be available if the consumer changed wireless service providers.

Carriers frequently disable or cripple device features, such as Bluetooth or Wi-Fi capabilities built into the phones. At pp. 11-12 of his report, Professor Wu describes how carriers have required handset manufacturers to disable functionality that would allow customers to use their phones for legitimate and beneficial purposes, such as photo sharing or the making of VoIP calls, for no apparent reason other than to maintain the carriers' revenue stream.

Consumers may expend considerable sums to purchase devices and service plans that are promoted as providing "unlimited" access to 3G broadband services, only to later discover that "unlimited" in carrier-speak does not really mean unlimited. Certain applications, such as P2P file sharing, VoIP and the uploading or downloading of movies, games or videos may be completely off-limits, and carriers often impose undisclosed or poorly disclosed limits on the bandwidth a customer may use during a given month.[6]

Consumers are often deterred from switching if they learn that they will incur additional costs to switch. Wireless carriers uniformly insist that customers signing term contracts agree to pay "early termination fees" ("ETFs") if they do not fulfill their obligation for the entire contract term. The ETFs typically range between $100 and $200, and serve no purpose other than to raise switching costs and thereby deter customers from changing carriers.

[6] *Id*. at 12-14.

B. Application and Enforcement of *Carterfone* to Wireless Devices and Applications is Long Overdue.

We believe the Skype petition warrants the institution of a Commission rulemaking proceeding. Skype has correctly identified some of the anti-consumer practices that are common in the wireless industry. These include handset locking,[7] disabling or restricting handset functionality (including Wi-Fi and Bluetooth)[8] and adoption of a "walled garden" approach to third generation ("3G") network service that restricts consumer access to innovative content, applications and services.[9]

The current 3G offerings are not truly substitutable for wired broadband access. To the extent that they provide access to Internet applications and services, the current "wireless broadband" services are overpriced, targeted to the business segment and hedged about with bandwidth, usage and application restrictions. Intermodal competition has suffered to date because vertically integrated carriers have not tried to offer a wireless broadband product that would compete with their wired offerings.

The Commission should consider how the closed architecture of the 3G cellular system will negatively impact the wireless broadband market in the future as it purports to become a true broadband competitor to DSL and cable modem. We believe the petition for rulemaking should be granted, but that the scope of the proceeding should be expanded to consider net neutrality beyond the applications layer into the physical layer of access to bandwidth. An open, competitive market in both markets—service provision and applications/devices—should be a priority for the Commission.

[7] Skype Petition at 15-16.
[8] Skype Petition at 14-15.
[9] Skype Petition at 17-18.

Skype's petition asks that the Commission require wireless carriers to adhere to principles of openness and neutrality at the two highest layers – the application layer and the device layer. Skype has asked the Commission to declare that the *Carterfone*[10] principle originally established in the wireline context applies with equal force to wireless services, and to initiate the first comprehensive review of wireless industry practices in nearly fifteen years. We support Skype's request that the Commission take steps to ensure that wireless carriers honor consumers' right to attach all non-harmful devices to the wireless network, and reaffirm consumers' right to run the applications of their choosing over wireless networks.

As one would expect, Skype frames the issues in its petition from the perspective of a developer of innovative applications that run on broadband platforms, including wireless networks. Elsewhere in these comments, we both echo Skype's concerns and identify related consumer concerns regarding wireless services. These concerns are reflected in reports, in comments previously submitted in Commission proceedings and in recent testimony before Congress.

We believe that the Commission is long overdue in applying the *Carterfone* principle to wireless devices, and we fully support Skype's request for "applications layer net neutrality." The Commission should, as Skype has requested,[11] initiate a thorough review of wireless industry practices – the first in nearly fifteen years – to determine whether those practices are consistent with the "bedrock consumer protection obligations" of Sections 201 and 202 of the Act and expressed in *Carterfone*.[12]

[10] *Use of the Carterfone Device in Message Toll Telephone Service*, 13 FCC 2d 420 (1968).
[11] Skype Petition at 29.
[12] *Id.*

C. The Wireless "Third Pipe" Does Not Yet Exist and Is Unlikely To Materialize if the "Walled Garden" Business Model of 3G Wireless Networks Is Carried Over into the Next Generation of Wireless Services.

For almost a decade, US broadband policy has been guided by the logic that intermodal, or cross-platform, competition will be the savior of national broadband performance in the marketplace. As we slip further behind the rest of the world, we have put more and more stock in the idea that a wireless competitor will arise to challenge the DSL and cable modem duopoly on price and speed.

i. *The Wireless "Third Pipe" Does Not Yet Exist*

Numerous hearings on Capitol Hill and speeches from legislators and regulators alike have extolled the virtues of the broadband marketplace with a wireless "third pipe." In the minds of some, this wireless competition has already arrived. Recent data from the FCC seem to support this point of view. 60% of the increase in broadband connections over the past 6 months is due to mobile cellular wireless connections.[13]

But these promising statistics are only promising because they are misleading. The FCC appears to count a broadband capable PDA subscriber exactly the same as a residential DSL or cable modem subscriber when counting broadband connections. However, wireless and wireline broadband products are in completely different product markets. They are not comparable in either performance or price; they are not substitutable services; and they are certainly not direct competitors. Though no precise data exists, it seems obvious that the overwhelming majority of subscribers to mobile broadband devices have not cancelled their wireline broadband service as a result. The wireless product is a complementary product for which the consumer pays extra.

[13] "High-Speed Services for Internet Access as of June 30, 2006," Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.

Most consumers do not use mobile wireless broadband on cell phones for the same purposes as a residential broadband connection. Consider these facts:

- These new mobile broadband lines are for the most part mobile devices with a data service capable of accessing the Internet at >200kbps speeds. They are highly unlikely to be used as a primary home broadband connection. In fact, 89.5% of mobile wireless connections are business subscribers, not residential subscribers.[14]
- In total, 17% of all broadband lines counted by the FCC are now mobile wireless. But only 3.8% of advanced service lines are mobile wireless (>200kbps in both directions), and only 2.5% of residential advanced service lines are mobile wireless.[15] What's more, the three largest mobile data carriers are AT&T, Verizon and Sprint. Two of these three carriers are also ILECs, and are the number one (AT&T) and number three (Verizon) most subscribed to broadband Internet service providers, and are the top 2 DSL providers in the United States.[16] Sprint's joint venture with cable operators also diminishes any potential role it could play as a third pipe.
- It is important to note that the multi-functionality of cellular phones with broadband data components may contribute to an overstating of the true level of mobile broadband use. A provider of a DSL line only reports to the FCC the lines that are actively subscribed to (and presumably used). However, if a cellular customer's mobile device is capable of data transfers at >200 kbps, then they are counted as a broadband line, even if the customer rarely uses the device for non-voice purposes.
- Cellular broadband connections are duplicate connections -- that is, very few people subscribe to and use a mobile broadband connection as their home broadband connection. Furthermore, mobile wireless connections are not substitutes for cable or DSL connections. These connections are slow, have strict bandwidth caps, and other restrictions, such as users not being allowed to use the connection for VoIP applications (Internet phone) and numerous other Internet-based functionalities.[17]

In sum, the 3G wireless broadband products available in the cellular marketplace today are not substitutable competitors to DSL and cable modem. There is no wireless "third pipe." The FCC's numbers confirm this—96% of advanced service lines for residential users are either DSL or cable modem. This is not a competitive market.

[14] *Ibid*.
[15] *Ibid*.
[16] Leichtman Research Group, May 2006.
[17] See: Tim Wu, "Wireless Net Neutrality," New America Foundation, February 2007, http://www.newamerica.net/publications/policy/wireless_net_neutrality

ii. *The 700 MHz Auction Does Not Appear Likely to Bring Us a Wireless "Third Pipe."*

The DTV transition has long been touted as the moment when wireless broadband will come into its own. A senior executive at Motorola made these comments in July of 2005: "The spectrum that will be made available at 700 MHz as a result of the transition to digital television provides a unique opportunity to provide facilities-based competitive broadband services."[18] His comments are typical of the hopes many have expressed about the power of the 700 MHz auction to deliver a wireless "third pipe."

To be sure, the 700 MHz auction could be the last, best chance to bring a third pipe to the market. It has been hailed as such by legislators, regulators, and industry leaders alike. Yet the favorites to win this auction (the major cellular carriers) do not appear likely to deliver the third pipe in 4G any more than they did in 3G services. Further, there are technical limitations that come with the proposed structure of the auction that would make it very difficult for any licensee to produce the desired outcome. It is quite a striking disconnect. All of the rhetoric about this auction promises the inauguration of the elusive third pipe in wireless broadband. But the facts fall short of these lofty goals.

First, there is nothing that says the winning bidders must use the frequencies to offer wireless broadband services that are true competitors to DSL and cable modem. The incumbent carriers are thought by most odds-makers to be the most likely winners in this auction—just as they were in the last spectrum auction for Advanced Wireless Services frequencies. These companies are the nation's leading providers of DSL service. Why would they use the 700 MHz licenses to offer a wireless broadband service that cannibalizes their own market share in DSL?

[18] Michael D. Kennedy, Senior Vice President, Motorola, Before the United States Senate Committee on Commerce, Science, & Transportation, July 12, 2005.

The answer is they would not—not here anymore than they have in 3G cellular broadband. They are far more likely to use this spectrum to offer new services which consumers will buy on top of their existing wireline voice service, wireline broadband service, and wireless voice service. This new service, 4G wireless, will be an enhanced mobile data service capable of delivering limited amounts of video and audio to a handheld device. This is not an unwelcome product, of course, but it will not solve the broadband problem; it will not bring a "third pipe".

Second, most of the other bidders in the pool will be looking to grab spectrum to fill out the geographic coverage area of their existing cellular networks. This will also allow them to compete, to some degree, with AT&T and Verizon Wireless, the industry leaders. This is not an unwelcome development either, but by itself, it will not solve our broadband problem.

Third, none of the spectrum blocks up for auction are large enough to provide a true alternative to DSL and cable modem no matter the intentions of the bidders. The largest block up for auction is 10 MHz. That translates into about 15 mbps of capacity spread over a cell sector. Depending on the density of users in that sector, the actual throughput performance experienced by a customer will struggle to exceed 2 mbps on the download, and probably will be less.[19] That's not bad today, but down the line as DSL and cable providers eventually increase speeds to 5-10 mbps of throughput for each user, that wireless service will not be a true competitor. It will be a reasonable broadband experience for a wireless device used for limited applications, but it will not be a substitute for a residential wireline connection. To have that, we would have to allocate at least 30 MHz to the task, and probably more.

[19] This estimate of bit rates (roughly 1.5 bits per hertz) in the 700 MHz band was provided by an engineer responsible for one of the entities preparing to bid for a 700 MHz license. It was confirmed independently by two other wireless engineers as a reasonable estimate given the frequency, power levels and modulation schemes available today.

Such a system of intramodal competition in the 700 MHz band using blocks of spectrum large enough to compete with wireline products is the only chance to realize the impact of the elusive third pipe with 700 MHz. Few observers are optimistic enough to believe the FCC intends to go in this direction.

iii. *Regulatory Oversight, in the Form of a "Net Neutrality" Condition, is Needed to Ensure That Consumers Will Have Access to a Wireless "Third Pipe."*

The current 3G mobile wireless broadband service provides valuable lessons about how the 4G market will look in practice. To the extent that 3G does offer a broadband product, it is offered in a "walled garden" environment. The network systems are proprietary. They do not interoperate. They have specific feature, application, and bandwidth limitations. Many service providers offer exclusive content deals available only to their subscribers. This marketing practice now collides with the free and open nature of the Internet. If this brand of discrimination—rampant in the 3G wireless space—continues in 4G, it will limit even further the ability of these products to serve a "third pipe" substitute for DSL and cable. Worse, it will set a precedent that discriminatory access, walled gardens of content, and gatekeepers on the Internet will be the norm for the wireless broadband platform across the spectrum. The entire wireless platform will not take on the open architecture of the Internet, but rather the closed architecture of the cellular systems will be pushed onto the Internet. This would be a negative development for consumers, entrepreneurs, and ultimately the future of innovation in speech and commerce on the Internet in the US.

The Commission should ensure that next-generation wireless networks are neutral towards the devices and applications running on them. Manufacturers and software developers should be permitted to sell, and consumers permitted to connect to the network, any innovative piece of software or hardware, provided only that the devices and applications do not harm the

network. In turn, the broadband network provider is fully compensated for use of its network. This is the ultimate free market.

In its petition, at pp. 22-24, Skype identifies the key market structure problem: the wireless industry today is far more concentrated than it was in 1992 when the Commission permitted carriers to bundle cellular service and equipment. In a market dominated by four national carriers, there is no incentive for any of the carriers to break ranks with the others and relax controls on subscribers' handsets and the applications and software that runs on them. Skype correctly points out that there is a great deal of marketplace inertia standing in the way of any single carrier relaxing restrictions on the use of potentially competing devices or applications. In this regard, the current situation is closely analogous to that faced by the Commission when it required wireless local number portability ("LNP"). There, as here, market forces were inadequate to ensure that the industry as a whole would move to LNP, and no carrier was willing to risk being the first carrier to voluntarily implement LNP because of the fear that it would lose customers to rival carriers.

In the absence of any realistic possibility that the market will self-correct the problem, the public interest requires a regulatory solution. Although the application of *Carterfone* to wireless devices and applications is a necessary first step, it is plainly insufficient to address the broader problem. Wireless carriers who offer access to the Internet could – and given the current market structure, probably would – seek to avoid commoditization of their services by implementing discriminatory practices, including packet prioritization and bandwidth allocation, at the next layer down – the network or transmission layer. By focusing narrowly on the wireless carriers' incentive to avoid commoditizing their voice service, Skype ignores the fact that precisely the same incentive exists with respect to wireless Internet access service, potentially leading to the

same anti-consumer conduct lower down in the protocol stack, where it might be less apparent to consumers and regulators.

All of this leads us to believe the Commission should make a broad inquiry into the potential role of licensed wireless broadband as a competitor to DSL, cable and other "wired" ISPs. Given the success of *Carterfone* and the openness that has characterized the public Internet, the starting point of the inquiry should be the presumption that neutrality of the application/device platform will maximize consumer benefit. We believe neutrality should be applied to the entire system, not just the application and device layers.

D. The Rulemaking Should Include Consideration of Whether to Require Providers of Wireless Broadband Services to Adhere to Network-Layer "Net Neutrality" Principles.

Although we support the Skype Petition, we are concerned that a proceeding that focuses on the device and application layers could leave unaddressed the equally problematic potential for anti-competitive and anti-consumer practices at the network layer, and thus not achieve a comprehensive solution. In these comments, we are highlighting the concerns of consumers. Free Press and other members of the *Ad Hoc* Public Interest Spectrum Coalition are today filing a separate set of comments with a public interest focus, urging the Commission to both immediately investigate and address harmful wireless carrier practices *and* adopt and enforce non-discrimination requirements for wireless Internet access networks. Clearly, consumers and providers of content, applications and services are no less deserving of protection against discrimination when they access the Internet via a wireless platform than when they do so via wireline broadband platforms. The Commission should prohibit discrimination by wireless carriers at the network layer, just as it did for wireline broadband customers when it in approved the merger of AT&T and BellSouth.

III. Conclusion

The Commission is at a critical juncture in its wireless policy, and is earnestly seeking ways to encourage the provision of wireless services that will be a true "third pipe" means of access to the Internet. It is unrealistic to expect any of the four major national wireless carriers to take on the role of "maverick" and implement net neutrality principles at the network layer. Yet wireless net neutrality is necessary if consumers and the providers of innovative devices, content, applications and services are to have free and unobstructed use of the Internet when accessing it via a wireless platform. For this reason, the Commission should not limit the scope of a rulemaking proceeding to the issues raised in Skype's petition, but should instead use this opportunity to consider the broader and more important question of whether additional measures, including the application of "net neutrality principles" at the "network" or "transmission" layer, will be necessary if the promise of wireless as a "third broadband pipe" is to be fulfilled.

As we have demonstrated in other proceedings, summarized herein, the current telco/cable oligopoly and their wireless affiliates have failed to deliver services that allow consumers to realize the full potential of the Internet. Absent a substantial shift in competition policy, there is no reason to expect that the current market participants will alter their present course. In other words, enforcement of the specific device- and application-layer neutrality principles identified in the Skype petition are necessary, but not sufficient, to achieve the desired results – innovation and robust competition in the device and software/applications, and full-featured, competitively priced and ubiquitously available broadband access services to all consumers.

Respectfully submitted,

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